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(71) Applicant *(for all designated States except US)*: MAXYGEN, INC. [US/US]; 3410 Central Expressway, Santa Clara, CA 95051 (US).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: MINSHULL, Jeremy [GB/US]; Apartment No. 1, 1130 Shrader Street, San Francisco, CA 94117 (US). STEMMER, Willem, P., C. [NL/US]; 108 Kathy Court, Los Gatos, CA 95030 (US).

(74) Agents: FITTS, Renee, A. et al.; Townsend and Townsend and Crew L.L.P., 8th floor, Two Embarcadero Center, San Francisco, CA 94111-3834 (US).

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(54) Title: METHODS AND COMPOSITIONS FOR CELLULAR AND METABOLIC ENGINEERING

(57) Abstract

The present invention is generally directed to the evolution of new metabolic pathways and the enhancement of bioprocessing through a process herein termed recursive sequence recombination. Recursive sequence recombination entails performing iterative cycles of recombination and screening or selection to "evolve" individual genes, whole plasmids or viruses, multigene clusters, or even whole genomes. Such techniques do not require the extensive analysis and computation required by conventional methods for metabolic engineering.